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Date of Election.	Date of Election.
1901 <i>Wetmore, W. S. K.</i>	1870 <i>Wilson, Gen. James Grant.</i>
1872 <i>Wetmore, William Boerum.</i>	1909 Wilson, M. Orme.
1905 Wheeler, John Davenport.	1875 Winslow, Gen. Edward F.
1906 Wheeler, Samuel H.	1901 Winslow, John Flack.
1907 Whinery, Charles C.	1902 Winter, Emil.
1905 Whitaker, John E.	1900 <i>Winthrop, Grenville L.</i>
1887 White, Alfred T.	1888 Witherbee, Frank S.
1887 <i>White, Henry.</i>	1891 Wolcott, Henry Roger.
1887 <i>White, J. LeRoy.</i>	1897 Wolff, Emil.
1886 <i>White, S. V.</i>	1909 Wolff, M. A.
1887 White, William Augustus.	1905 Wood, Henry A. Wise.
1905 White, William H.	1903 Wood, Henry R.
1901 Whitehouse, William FitzHugh.	1911 Wood, William C.
1891 Whitney, Milton B.	1898 Woods, Edward A.
1902 <i>Whitney, W. Beaumont.</i>	1906 Worrall, Charles Addams.
1908 Wickersham, George W.	1904 Wright, J. Dunbar.
1901 <i>Willets, Howard.</i>	1886 Wright, William Phillips.
1900 Willets, John T.	1907 Wunderlich, Frederick W., M.D.
1882 <i>Williams, David.</i>	1902 <i>Wyckoff, Clarence F.</i>
1902 <i>Williams, John Skelton.</i>	1902 <i>Wyckoff, Edward G.</i>
1911 Williams, Dr. M. B.	1901 Wyckoff, William F.
1906 <i>Williams, Richard H.</i>	1905 Yeisley, George C., D.D.
1901 <i>Williams, Timothy S.</i>	1884 <i>Zabriskie, Andrew C.</i>
1893 Wills, Charles T.	1898 Zaring, Charles W.
1903 Wilson, Henry R.	1905 Zickel, S.

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## GEOGRAPHICAL RECORD

### AMERICA

NEW MONTHLY CLOUDINESS CHARTS FOR THE UNITED STATES. In 1891 Gen. A. W. Greely, Chief Signal Officer of the Army, published the first set of monthly cloudiness charts for the United States (Washington, D. C., *fol.* 1891). The longest period for which data were then available was 18 years (1871-1888), and many stations had records for shorter periods, some for less than 5 years. In the "Report of the Chief of the Weather Bureau for 1896-97" there was later published a mean annual cloudiness chart on the basis of more data and of longer records. Mr. Kenneth McR. Clark, a student of Harvard University, has now constructed a new set of cloudiness charts (monthly and annual), which are reproduced, with a brief discussion, in the *Quarterly Journal* of the Royal Meteorological Society for April, 1911. Data for 77 stations have been used, at which averages are based on periods of 30 years or more. There were also 31 stations with periods of less than 10 years, and 15 with 5 years or less. The short-period stations were given less weight than the longer-period stations; some stations were omitted because of local topographical influences upon their cloudiness, and some long-period stations were given less weight when their data differed considerably from those of surrounding stations.

The most marked features appear over the Pacific Coast and the Great Lakes.

On the North Pacific Coast the combined effect of the Coast Ranges and the on-shore westerly winds causes a high percentage of cloudiness, especially in winter, when the northern storm track swings down over this region. The Great Lakes region shows a similar large amount of cloudiness, especially in the winter, because of its location on or near the northern cyclonic tracks and because of the presence of the water surface. The California Valley, protected from moisture-bearing winds by the Coast Range, shows the minimum cloudiness for the country.

R. DEC. WARD.

CLIMATE OF PUGET SOUND BASIN. Buried away in a "Reconnaissance Soil Survey of the Eastern Part of the Puget Sound Basin, Washington (U. S. Dept. of Agric. Bur. of Soils; Field Operations, 1909. Washington, D. C., 1911) there is a short account of the climate of the region, prepared by Professor E. J. Saunders, of the University of Washington. The discussion consists of twelve pages of text, together with sketch maps showing annual precipitation, average monthly precipitation, number of clear days and number of days with rain, average lowest and highest temperatures, and average dates of first and last frost. It is a satisfaction to note (p. 26) the following statement: "Many have ascribed this equable climate to the Japan Current, but—the prevailing westerly winds, the cyclonic storms, and the condensation of moisture are the chief factors in causing these conditions. Changes of climate have also been explained by changes in the position of the Japan Current. In the first place, no permanent change of climate is shown by the records, and any slight differences . . . between two winter seasons, or two summer seasons, or different months, can be easily accounted for by irregular variations in the path of the cyclonic storms which pass over the area."

R. DEC. WARD.

SOME RESULTS OF RECENT ANTHROPOLOGICAL EXPLORATION IN PERU. Dr. Ales Hrdlička, Curator of the Division of Physical Anthropology, U. S. National Museum, visited the coast of Peru during the summer of 1910 and secured some unlooked-for anthropological results. He examined over thirty ancient cemeteries and collected upwards of 3,400 crania and other skeletal remains. A large part of the crania were free from artificial deformation. His work was confined to the two most important districts on the coast, Pachacamac and Chan-chan or Gran Chimu.

With this material and the collections from Ancon and other places on the Peruvian littoral, it is now possible to learn definitely the physical characteristics of the population of the Peruvian coasts for a distance of over 400 miles, and establish a firm foundation for anthropological comparisons for the rest of the country. From the preliminary examination of the material it may now be positively stated that the whole coast of Peru at least from Pisco to Pacasmayo was peopled by one and the same type of natives, the brachycephalic Indian of moderate stature. The earliest people were followed by others of the same fundamental physical type, but of modified habits shown in part by the pronounced occipital head flattenings which indicate the use of cradle-boards to which the infant was tied for a long period. Belonging to this period are large cemeteries in which the graves yield copper or bronze, with some gold and interesting pottery. The brachycephalic people seem to have been the first inhabitants of the coast, for there was absolutely no trace of any previous occupants, and the peopling of the coast by the brachycephals, judging from the nature and extent of the cemeteries, could not have been of very great duration, not over some centuries before the arrival of the whites.

This old type of the coast people is fundamentally the same as a large portion of the inhabitants of Ecuador, Colombia, Panama, Central America and Yucatan. The present native population was seen by Dr. Hrdlicka to show this type as far as the southern confines of the Peru of to-day. Farther southward, however, at Arica and along the Chilean coast, there is an increasingly large proportion of dolichocephalic natives, and from the northern extremity of the central part of the Chilean coast southward this latter type is the only one encountered. (*Smithson. Misc. Coll.*, Vol. 56, 1911, No. 16.)

**ATLANTIC TERMINAL DOCKS ON THE PANAMA CANAL.** A plan for terminal facilities at the Atlantic entrance of the Canal has been approved. It consists of a series of five reinforced concrete docks at which ten 1,000-foot vessels, or twenty vessels of the type now in the Isthmian trade, may tie up at one time and take on or discharge cargo. Borings are now being made to determine the nature of the material underlying the water at this place. The estimated cost of the series of five docks is \$7,811,666. (*The Canal Record*, Vol. 4, No. 40, 1911.)

**POPULATION OF MEXICO.** The census enumeration in Mexico, in October, 1910, gives the Republic a population of 15,063,207, an increase of 10.7 per cent. since the last census, and a density of 8 to the square kilometer.

#### AFRICA

**THE MATADI-LEOPOLDVILLE R.R.** This railroad is the sole connecting link between the upper and the lower Congo. The traffic is becoming so large that measures are about to be adopted for improving the line. It has recently been examined by a Belgian engineer with a view to using electricity as the motive power to be derived from the Congo cataracts. Another scheme under consideration and which, it is believed, will soon be adopted, is the laying of a pipe between Matadi and Leopoldville for supplying steamers on the upper river with crude petroleum to take the place of wood fuel. It is proposed, at the same time, to substitute liquid fuel for coal and briquettes on the locomotives. It would thus be possible to accelerate both the railroad and steamer services between the lower Congo and the upper reaches of the river, where wood fuel is becoming scarce at the stopping places. Oil depots would be established along the railroad and the river.

**THE MADAGASCAR RAILROAD.** The railroad which, for some years has been in operation between Tananarivo, the capital of Madagascar, and Brickaville (169 miles), is being extended from its present eastern terminus at Brickaville to the port of Tamatave, a distance of sixty miles. It is expected that the extension will be completed in 1913, when the capital will be connected by rail with the most important port of the island. (*Bd. of Trade Journ.*, July 6, 1911.)

**COTTON GROWING IN THE BRITISH EMPIRE.** The *Report* of the British Cotton Growing Association for 1910 says that in that year the amount of baled cotton produced in the British colonies was 32,900 bales of 400 lbs. each. The crop of 1908 was 22,300 bales. About three-fourths of the total is produced in the African Colonies, Uganda producing 12,000 bales and the country tributary to Lagos 6,000 bales. Northern Nigeria, which is supposed to be the greatest future reserve in the British colonies of cotton production, yielded only 400 bales. Not until the railroad now building is extended through the large cotton area of that region will the receipts from Northern Nigeria be important.

## ASIA

STEAMSHIP SERVICE ON THE AMUR AND SHILKA RIVERS. The Russian Government has empowered the Minister of Ways of Communication to organize, for a period of six years from 1911, a subsidized regular passenger and postal steamship service on the rivers Shilka and Amur between Stretensk on the Shilka and Nicolaievsk at the mouth of the Amur, a distance of about 2,000 miles. The steamship company undertaking this service must guarantee to make not less than thirty-two regular sailings yearly and must maintain not less than seven steamers on the service. (*Board of Trade Journ.*, May 25, 1911.)

## EUROPE

POPULATION OF THE AUSTRIA-HUNGARIAN MONARCHY. The census of Dec. 31, 1910, shows a population for the Monarchy of 51,304,249, with a density of 76 to the square kilometer. The population of Austria is 28,567,898; Hungary, 20,840,678; Bosnia-Herzegovina, 1,895,673. The increase in population since the last preceding census of Austria is 9.2 per cent.; of Hungary, 8.34 per cent.

POPULATION OF SPAIN. The population of Spain, according to the census of Dec. 31, 1910, is 19,503,068, including the Canary Islands. The increase in population since the last preceding census was 4.81 per cent. Density, 39 to the square kilometer.

BRITISH CLIMATOLOGY. "The Present Position of British Climatology" formed the subject of the address of Henry Mellish, President of the Royal Meteorological Society, delivered at the meeting of January 18, 1911, and published in the *Quart. Journ. of the Roy. Meteor. Soc.* for April, 1911. At the end of this address there is a bibliography which contains the more important articles on the subject, and which will prove useful to those who are investigating British climatology.

R. DEC. WARD.

THE FÖHN WIND AT INNSBRUCK. First-hand descriptions of meteorological phenomena possess obvious advantages over dry, summarized descriptions of the general characteristics of such phenomena. A vivid account of the föhn winds of Innsbruck, by a "resident of Innsbruck," recently published (*Symons's Met. Mag.*, Feb., 1911), emphasizes in a very striking way the relations of this interesting wind to man. So common is the föhn at Innsbruck that it is *the* wind, in the minds of the inhabitants. "Es geht wieder der Wind" is the popular expression when the well-known gusts begin. Windows and doors are then closed to keep out the clouds of dust. Headache, lassitude, depression are the symptoms which many persons experience regularly just before or during the coming of the föhn. Innsbruck has, on the average, forty-three days of föhn, each year, distributed as follows:

JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
3.1	3.4	<b>6.0</b>	<b>5.9</b>	<b>5.1</b>	1.5	2.2	1.4	2.0	<b>4.6</b>	<b>4.3</b>	3.0	42.5

The spring and autumn have the most föhn winds. The numbers of days' duration of these winds, as shown by twenty-five years of observation, are shown in the following table:

Days of föhn.....	1	2	3	4	5	6	7	8
No. of times.....	214	170	61	29	22	5	4	2

Thus, a föhn wind of one day's duration occurred 214 times in twenty-five years, while one of eight days' duration occurred only twice.

An interesting relation to the popularity of Innsbruck as a winter resort is brought out in the fact that the frequent occurrence of this wind in spring is a serious blow to ski-running. While the "Schneefresser" is welcome to the peasants in the high valleys, as melting the snow and moderating the severity of the winter cold, the ski-runner and the skater look upon the föhn with very different eyes. The wind often lasts longest on just those heights where most of the ski-running takes place. The relation of this remarkable wind to vegetation is brought out in the same article. Maize can be raised at Innsbruck because of the moderating influence of these warm winds. A further interesting feature "is the survival in the Inn Valley, near Innsbruck, of floral types from the inter-glacial period, which succeeded the great Ice Age. It is owing to the mild temperature set up by the föhn that these relics of a semi-tropical vegetation have been enabled to continue their existence in their present environment."

R. DEC. WARD.

#### PACIFIC OCEAN

THE TERRA NOVA AS A SURVEY SHIP. After conveying Capt. Scott and his Antarctic Expedition to their bases of operations in South Victoria Land and King Edward VII Land, the Polar exploring vessel *Terra Nova* returned to New Zealand, where she was chartered by the government for survey work. In July she sailed from Christchurch for the northern coast of North Island and will work between that coast and the Three Kings Islands lying thirty-eight miles northwest of the mainland. These off-shore soundings will be taken to delimit the hundred fathoms line, and shoal soundings will also be made between the islands and the mainland. The results will be of great value to the shipping world, and especially to steamers approaching the North Island from the westward. The work will occupy the *Terra Nova* about three months. In October she will return to Lyttelton to prepare for her next voyage to South Victoria Land. (*London Times*, Weekly Edition, p. 423, 1911.)

FUR SEAL TREATY SIGNED AT WASHINGTON. This treaty between England, Russia, Japan and the United States was signed on July 7, and these countries have now composed their long-existing differences on this subject. The old common-law limitation of three miles from shore is abolished, and no fur seals are to be killed in the North Pacific Ocean, including the seas of Bering, Okhotsk, Kamtchatka and Japan. Provision is made for the maintenance of a patrol of the seal waters by representatives of all the nations concerned. The agreement is to hold for fifteen years, and as long thereafter as no one of the governments denounces it.

#### PHYSICAL GEOGRAPHY

THE DEEPEST BORING. According to the *Geographische Zeitschrift* (Vol. 7, No. 4, pp. 228-9), the deepest boring yet made is at Czuchow in the Rybnik district of Silesia. It has reached a depth of 7,349 feet beneath the surface. The boring was begun ten years ago, and its diameter near the surface of 1.41 feet was considerably reduced with increasing depth. The temperatures at the various depths are of much interest. At 1,971 feet, the temperature was 82.4° F. From this point to 2,294 feet, the temperature increased very slowly and irregularly. At 3,806 feet, 122° F. was recorded; at 4,156 feet, 140°; at 5,193 feet, 150.8°; at 6,855 feet, 176°. There was an average increase of 1.8° F. in

temperature for every 104 feet of depth attained. At the same rate of increase, the heat at 9,000 feet would be about the boiling point of water. As heat determinations have not been made at greater depths it is, of course, impossible to say what the rate of increase may be below the point attained.

A LAYER OF SAND RAISED ABOVE WATER LEVEL BY GASES. The formation of an island, due to an unusual cause, is reported in the April number of the *Zeitsch. der Gesells. für Erdk.* of Berlin. On Oct. 23, 1910, an island, 230 by 100 feet in dimensions, appeared on the surface of the Ögel Sea, a small lake near Beeskow in the province of Brandenburg. The investigations of Prof. Potonié, the botanist, showed that it owed its origin to the buoyancy of gases. The lake originally did not drain into the Spree River. Its depth amounted to about 100 feet, which was gradually decreased to 13 feet by the accumulation of decomposed vegetable and calcareous matter. Subsequently a connection was established between the lake and the Spree. This resulted in the deposition of a stratum of sand, which gradually accumulated to such a degree that the gases forming in the mud at the bottom of the lake could no longer escape. The pressure of the gas finally became so great that it was able to raise the layer of sand above the level of the water, thus creating an island. Mud flowed into the void caused by the uplifting of the sand stratum. The island is thus not a floating island, as has been proved by boring.

#### PERSONAL

PROF. W. M. DAVIS TO BE EXCHANGE PROFESSOR IN PARIS. The newly arranged exchange of professors between Harvard University and the Ministry of Public Instruction in France goes into effect this winter for the first time. Prof. Diehl of the Sorbonne comes to Harvard to lecture on Byzantine history; Prof. W. M. Davis of Harvard goes to Paris to lecture on physical geography. This is Prof. Davis' second term of educational service abroad, as in the winter of 1908-09 he was exchange professor at the University of Berlin. His residence there was preceded by an informal international excursion across northern Italy and into southeastern France, attended by professors and students of geography in numbers varying from four to forty or more. A similar excursion for this summer has been arranged in coöperation with Dr. Fr. Nussbaum of Bern, a member of the party in 1908. The excursion will take the form of a "geographical pilgrimage to Rome," beginning in Ireland in late July, continuing with varying membership across England, France and Switzerland, and arriving in Italy in time to take part in such excursions as may be there planned to precede the International Geographical Congress in Rome, Oct. 15-22. Prof. Davis will return from Rome to Paris, and conduct his work at the Sorbonne through the winter semester, Nov. 3 to March 15. His special subject will be the Forms of the Lands, presented in lectures to less advanced students, and in practical exercises to more advanced students.

Prof. H. E. Gregory of Yale University is continuing this summer his study of the water supply and economic resources of the Navajo Reservation for the U. S. Geological Survey. His assistants are Prof. W. R. Barrows and Messrs. K. C. Heald and H. F. Robinson, the latter irrigation engineer of the Indian Service.

Prof. F. W. Sargeson, of the Department of Geology, University of Minnesota, has been appointed geologist on the U. S. Geological Survey. He will complete

the areal, stratigraphic and glacial geology of the Minneapolis, St. Paul, Anoka and White Bear Quadrangles and prepare for publication a folio descriptive of this region.

#### OBITUARY

PROF. SAMUEL CALVIN. Prof. Calvin, head of the Department of Geology, State University of Iowa, and State Geologist of Iowa, died at Iowa City on April 17. He was 71 years old and had been connected with the university for thirty-seven years.

EDWIN E. HOWELL. Mr. Howell died at his home in Washington on Easter Sunday. He was born on March 12, 1845, in Genesee County, N. Y. For three years he was a geologist of the Wheeler and Powell surveys, making geological reconnaissances in Utah, Nevada, Arizona and New Mexico. The important work by which he is best known was the modelling of relief maps in which he was a pioneer. Many museums and schoolrooms throughout the country have specimens of his plastic representations of physiography, topography and geological structure.

#### GENERAL

AERONAUTICS AND CLIMATE. That the development of the art of flying is very closely dependent upon a more accurate knowledge of meteorological conditions is obvious to anyone who stops for a moment to consider the use of aeroplanes and balloons. Some of the best studies of the winds of Germany, recently published, were distinctly undertaken for the purpose of benefiting aerial navigation. The whole matter is one which is certain to attract a rapidly increasing amount of attention. A writer in the *New York Nation* (June 9, 1911), under the title "Problems of the Air," emphasizes the meteorological, and even the larger climatic relations of the aerial navigation of the future. Of the three important basic problems which must be dealt with before aerial navigation can become a well-established art, two are meteorological, *viz.*, a thorough investigation of the behavior of moving "planes" in the air, and the mapping of the air regions over the principal countries of the world, or at least along the principal air lines. The mapping of the air is most essential. Every aviator has had experience with the currents and counter-currents, air walls and precipices. "The men who crossed the English Channel," says Waldemar Kaempffert in his book, "The New Art of Flying," "found that against the chalk cliffs of Dover a vast invisible surf of air beats as furiously as the roaring visible surf in the Channel below." There are, also, some large climatic controls over aviation which the writer of the same article clearly points out. "Natural conditions," he says, "are more favorable to air flight in France than in any other European country. Her more equable climate, her greater amount of sunlight as compared with Germany or England, must be taken into consideration. In the rather random speculation regarding the possibilities of war in the air, little attention has been paid to this advantage which one country may enjoy over another. In England, with its rain and fog, the military air-ship in the future can count only on so many days' activity during the year. In Germany, the range is probably wider. In France it is wider still." R. DEC. WARD.